



# A Workers' Survey on Exposure to Carcinogens in the European Union – Utility, Reliability and Feasibility

**Session: How to survey health and safety at work in the changing world of work? Theory, challenges and practice**

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# EU-OSHA - Who we are

*The European Union body responsible for the collection, analysis and dissemination of relevant information to serve the needs of those involved in safety and health at work.*

- One of 40 **EU agencies**
- Governed by **European law**
- Mostly **financed** from the general EU budget
- Independent in the execution of its **mission/tasks**
- **A tripartite network organisation**, closely linked to EU actors and national networks through the national focal points
- ~~▪ **Legislation – inspection**~~



# Origin of the project

- **Exposure to carcinogens at work contributes to many cancer cases**
- **More than half** of work-related fatalities in the European Union are related to **cancer**
- Need for harmonised and **comparable data on exposure to carcinogens**
- **Existing and unique survey in Australia** (AWES cancer, 2012)

# Aiming for a consensus

- **Feasibility study on a survey on exposure to cancer risks (2017)**
- **Results and recommendations of the study discussed with experts and with our executive Board (2018)**
- **Scientific consensus on:**
  - the feasibility of running a robust exposure survey
  - the value of the anticipated results in terms of their reliability
  - the extent to which such results would meet a widely-identified need
  - the absence of a viable alternative to meeting this need.

 **1<sup>st</sup> phase of the survey in our work programme from 2020**

<https://osha.europa.eu/en/tools-and-publications/publications/feasibility-study-development-computer-assisted-telephone-survey/view>

# Complementarity to other existing data

- **Epidemiological studies on carcinogens**
  - **International databanks** e.g. IARC list of carcinogens
  - **Various national data sources on exposure to carcinogens**
    - registers
    - surveys
- ➡ But national language and lack of harmonisation**
- **European-wide data sources**
    - European Working Conditions Survey (EWCS): general question
    - European Occupational Diseases Statistics (EODS): different definition in all member states
    - HazChem@Work: measurement data on exposure to chemicals

# Measurement data complementary to the survey

- **Consensus of consulted experts on complementarity**
- The survey might **identify an area which needs more investigation.**
- **Measurement data can inform the questions in the exposure survey**, in particular ensuring that the major sources of exposure in all countries are covered.
- The survey results could **be compared** to existing measurement data in different member states and this would facilitate their interpretation (tasks, exposure duration, etc).
- It would be possible to **refine and correlate results of the survey with exposure measurement data** in the future.



**A more accurate picture of exposure to cancer risk factors**



# Information needs addressed with the survey

- Cancer risk factors responsible for most of the exposures
- Exposure **circumstances most prevalent in Europe** (context and conditions)
- **Overall number of workers exposed to each cancer risk factor and to multiple cancer risk factors** (exposure estimates)
- **Characteristics of workers** exposed to cancer risk factors
- **Frequency, extent and intensity** of all exposures can be included
- Use of preventive measures, e.g. personal protection equipment (PPE)
- Information on workers' awareness of risk can be included

# Envisaged follow-up actions to the survey

- **Better identification** of risk factors
- **Better targeted awareness-raising** about exposure to cancer risk factors
- **Prioritisation** of sectors, occupations, tasks and cancer risk factors **for prevention purposes**
- **Better design and targeting of preventive measures**
- Contribution to **evidence base for policy**, including evaluation



# Survey methodology – main features

- A telephone survey with workers
- A standardised questionnaire with modules customised for **a broad variety of jobs** (more than 50)
- **Short, precise and factual customised questions about tasks**
- **Possible exposure to 46 cancer risk factors**, going beyond substances (e.g. radiation and night shift)
- **Probability of exposure assessed by experts**, using OccIDEAS tool
- Possible **multiple exposure situations** for a person
- A large number of risk factors covered, not only cancer risk factors



# Survey coverage of risk factors and substances

## About 46 cancer risk factors – combined exposure:

- **Industrial chemicals** (formaldehyde, ethylene oxide, acrylamide, o-Toluidine, 1,3-Butadiene, ...)
- **Inorganic dusts** (asbestos, silica)
- **Metals** (Chromium VI, cadmium, arsenic, beryllium, nickel, cobalt, lead ...)
- **Mineral oils**
- **Organic dust** (e.g. wood dust)
- **Combustion products** (diesel exhaust, tobacco smoke)
- **Solvents** (benzene, trichloroethylene, ...)
- **Pesticides**
- **Radiation** (UV radiation, ionizing radiation, ...)

# Advantages of the survey

- **Harmonised methodology and standardised data collection across Europe**
- **Based on a very sophisticated, well-elaborated and extensively tested concept tool: OccIDEAS** (algorithms previously defined on the basis of expert knowledge)
- **High degree of cross-national comparability** due to objective questioning and classification, based on questionnaires translated with high quality standards
- **More complete view on multiple exposures**
- **Analysis of exposure by demographic characteristics and characteristics of the workplace; vulnerable groups can be identified**

# Alternative options for survey implementation

	Incomplete coverage of countries (6-8 selected countries)	Complete coverage of countries (all countries)
<b>Limited depth</b> (small national sample sizes: 1,000 interviews)		<b>OPTION 1</b> <ul style="list-style-type: none"><li>• Low level of details i.e. no sectoral analysis</li><li>• Reduced impact of the survey</li><li>• Limited cost</li></ul>
<b>Full depth</b> (full sample size: 3,000 interviews)	<b>OPTION 2</b> <ul style="list-style-type: none"><li>• High level of details i.e. reliable information by sector</li><li>• Phased approach</li><li>• Limited cost</li></ul>	<b>OPTION 3</b> <ul style="list-style-type: none"><li>• Full analysis and comparability</li><li>• High cost</li></ul>

**All options:** no difference as regards the number of cancer risk factors and questions.

# Not a conventional workers' survey

- **Target population: working population** (structure based on Labour Force survey data)
- **Representative data and possible coverage of hard-to-reach workers** (e.g. self-employed, family workers, workers in MSEs)
- **Low expected bias** (unequal non-response can be corrected by weighting)
- Large sample size: **lower survey error**
- Good training of interviewers and factual questions: **low measurement error** and **low reporting bias**
- **Data collection via CATI** and CAWI as a complementary data collection?

# Strenghts of a phased approach

- High level of details: **reliable information** by sector and occupation
- **Relevant results** for all Member States by extrapolation
- Useful data for **prevention purposes**
- **A solid basis for a future decision on a subsequent phase**  
(complete coverage of countries)
- **Planning**
  - 2019: one expert meeting to help in the selection of countries, sectors, cancer risk factors...
  - 2020: preparatory work
  - 2021-2022: survey development and execution
  - 2023: publications of first findings and dissemination
  - *2024: evaluation of the exercise and decision on the potential expansion*

# Challenges and limitations

- **Decisions to be taken for starting implementing the survey**
  - Selection of countries (representative of their area)
  - Final list of risk factors (fewer possible but no more)
  - Sampling design
- **Adaptation to Europe**
  - Identification of occupational hygiene experts to validate the questionnaire at national level
  - Need for experts' engagement over time
  - Translation to national language: simple questions but very specific to the job (need for a glossary)
- **Fieldwork**
  - Same limitations as any telephone population survey
  - Training of interviewers